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### Michèle Belot on the importance 'to eat your greens'

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**Focus paper****School of  
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# “Eat your greens” - *incentives and dietary choices: a field experiment in primary schools*



Poor nutrition leads to numerous premature deaths and is a primary cause behind the recent surge in obesity which is contributing to the rising cost of health care in many developed countries. To improve nutrition, policy makers have been pushing information interventions, such as “5-a-day” campaigns, to encourage people to develop better eating habits. However, the effectiveness of information only campaigns has been questioned and policy makers are now considering whether rewarding individuals for healthier eating is a better approach. Existing evidence is mixed, with some research suggesting that rewarding children for eating healthy items can lead to those items being less preferred.

Michèle Belot (University of Edinburgh), Jonathan James (University of Bath) and Patrick Nolen (University of Essex) carried out a randomised controlled field experiment to test whether providing short term incentives for eating fruit and vegetables increases consumption and helps develop healthier habits. For a period of 4 weeks children were rewarded with stickers, small toys and stationery for choosing fruit and vegetables at lunch time.

**Design of the experiment**

A randomised controlled experiment was carried out in 31 schools in England involving a total number of 664 pupils in year 2 and 5. Children’s dietary choices at lunch were monitored for a period of 6 weeks and an intervention was carried out in two-thirds of the schools for a period of 4 weeks (starting 1 week after the monitoring began and ending 1 week before the monitoring stopped). An additional week of monitoring was conducted 6 months later.

Schools were at randomly placed into 1 of 3 groups.

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| 1. Control – choices and consumption were monitored but no incentives were provided. | 2. Piece Rate Schools – children were given a sticker if they chose or brought in their packed lunch a fruit or vegetable. Children received an additional reward if they chose more than 4 fruit or vegetables over the course of the week. | 3. Competitive Tournament Schools – children were given a sticker if they chose or brought in their packed lunch a fruit or vegetable. If they collected more stickers than their peers (they were assigned randomly each week to groups of 4) the child with most stickers in each group received an additional reward. |
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The study evaluates the effects of the intervention by comparing how consumption changed over time in “treated” schools (where incentives were introduced) in comparison to control schools. The research shows that the incentives have an overall positive effect on choice and consumption of healthy items at lunchtime in treated schools. The proportion of those trying fruit and vegetables increased by around a third for the group who before the intervention were not eating fruit and vegetables every day. Overall the competitive tournament works better while the positive effects of the piece-rate scheme diminish after two weeks.

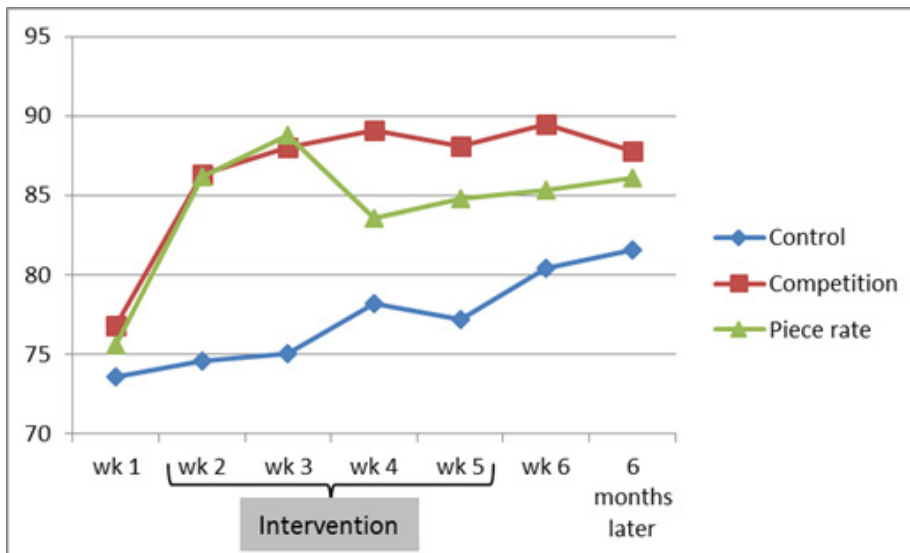


Figure 1: Effects of the intervention on consumption (percentage of times the child tries a fruit or vegetable at lunch in a given week) over the course of the study.

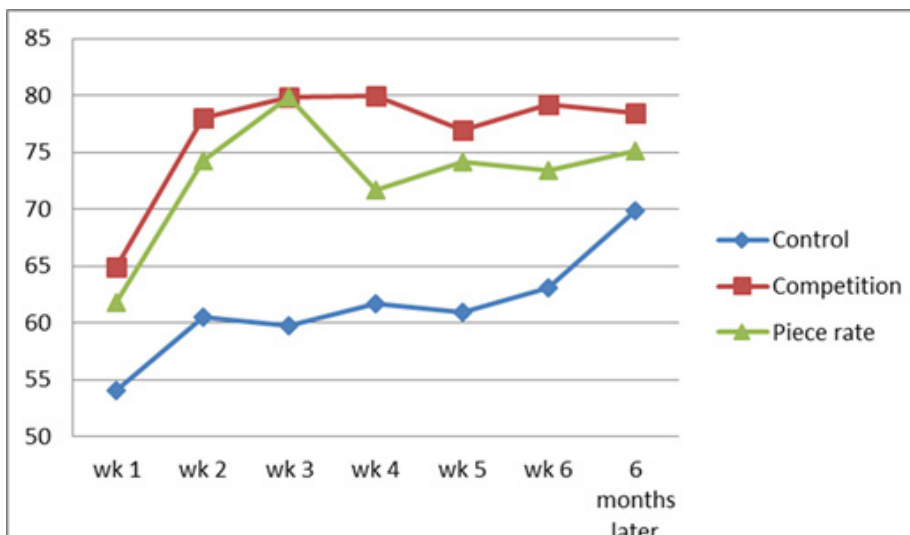
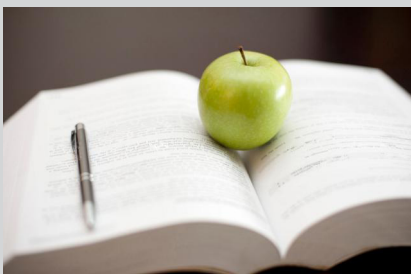


Figure 2: Effects of the intervention on consumption (percentage of times the child eats more than half a portion of fruit or vegetable at lunch in a given week) over the course of the study.

We find important differences in the effects of the intervention depending on age, gender and socio-economic status:

- Boys respond to both competitive and piece rate schemes, while girls mainly respond to the competition.
- The piece rate scheme seems to work well for older children, but it backfires for younger ones. For them, it seems that the competition works better.
- We also find more pronounced effects among the free school meal children, which is an encouraging result.

Most of the effects remain immediately after the incentives are removed (the week following the intervention), but we do not find strong evidence for habit formation in the longer run (6 months after the reward scheme has been removed), except for the group of free school meal children, which is a exception.



The results are important for policy makers and health officials trying to fight problems associated with poor nutrition. They show that positive incentives do work in encouraging healthy dietary choices and that the results of a short term intervention can have long-lasting effects but that a “one-size-fits-all” reward scheme may not work. The mixed effects suggest that incentives need to be evaluated at the individual level and different policies may have to be developed for different subgroups. Furthermore, increasing the length of time an intervention is taking place is not the only way policy makers can increase the likelihood that positive behaviours are adopted: for instance, tournaments could have an effect when individual-based schemes do not.